

TRIBUTE TO EDWARD WITTEN

HON. RUSH D. HOLT

OF NEW JERSEY

IN THE HOUSE OF REPRESENTATIVES

Friday, November 7, 2003

Mr. HOLT. Mr. Speaker, today at the White House, Edward Witten was awarded the National Medal of Science Award, the nation's highest science and engineering honor.

The presidential medal is the nation's highest honor for researchers who make major impacts in fields of science and engineering through career-long, ground-breaking achievements. The medal, established by Congress in 1959, also recognizes contributions to innovation, industry or education.

Edward Witten, the Charles Simonyi Professor of Physics at the Institute for Advanced Study, received the award "for his leadership role in advancing a broad range of topics in theoretical physics, including attempts to understand the fundamental forces of nature through string theory; and his unparalleled inspiration in using insights from physics to unify apparently disparate mathematical areas." Professor Witten may be best known as the world leader in "string theory," an attempt by physicists to describe in one unified way all the known forces of nature, as well as to understand nature at the most basic level. The combination of the four fundamental forces (electromagnetic, strong, weak, and gravitational) in one theoretical framework was a goal sought, but unattained by Albert Einstein. The concept underlying string theory is to replace the usual point-like representation of fundamental particles with vanishingly small vibrating strings. This resolves an incompatibility between quantum mechanics and general relativity, which is the premier challenge of theoretical physics. Dr. Witten's original contributions and incisive surveys have set the agenda for many developments, such as the progress in "dualities," which suggest that all known string theories are related.

Dr. Witten's earliest papers produced advances in quantum chromodynamics (QCD), a theory that describes the interactions among the fundamental particles (quarks and gluons) that make up all nuclei. In particular, he solved the problem of expressing radioactive corrections arising from heavy particles in terms of effective light quarks. In other early work, he understood how to combine properties of the Dirac equation with those of the Riemann curvature tensor, to get a new formula for the gravitational energy, and to give a new and direct proof of the positive energy theorem in general relativity. He also discovered new solutions of the equations of C.N. Yang and Robert Mills, and realized their importance for physics.

Dr. Witten discovered many relations between "supersymmetric quantum theory" and geometry. Supersymmetry lies at the basis of a picture of fundamental particles studied at the Fermilab Tevatron, and soon at the Large Hadron Collider under construction at CERN. Dr. Witten showed that a mathematical theory of Michael Atiyah and I.M. Singer parallels supersymmetry and plays a central role in particle physics. He applied this concept to the study of nonperturbative supersymmetry breaking. He used this same concept to produce a new derivation of a fundamental mathematical theory of Marston Morse.

One of Dr. Witten's deepest mathematical insights arose from his glimpsing the relation between the physics of gauge theory and the mathematics of knots. This work has led to a revolution in mathematics, including the understanding of the classification of higher dimensional spaces. For this work, Dr. Witten became the only theoretical physicist ever to receive the Fields Medal, the most prestigious award in pure mathematics. Conversely, Dr. Witten was broadly responsible for the demonstration that algebraic geometry and topology, core disciplines of modern mathematics, hold the key to understanding the deepest properties of string theory and gauge field theory.

Dr. Witten is as clear and engaging a speaker as he is a creative and powerful theorist. I find it especially commendable that he also is an effective thinker and worker for peace and social justice in the Middle East and the world.

Dr. Witten, who has been on the Faculty of the Institute for Advanced Study since 1987, is the recipient of a 1982 MacArthur Fellowship; the 1985 Einstein Medal from the Einstein Society of Berne, Switzerland; the 1985 Dirac Medal from the International Center for Theoretical Physics; the 1990 Fields Medal; and numerous other awards. He is a member of the American Academy of Arts and Sciences, the National Academy of Sciences, a foreign member of the Royal Society, and an associate member of the Academy of Sciences of Paris. Ed Witten is a good friend of mine, and I am pleased to congratulate him on his award, and I thank him for the contribution he has made to improve our knowledge and understanding.

25TH ANNIVERSARY OF ENACTMENT OF INDIAN CHILD WELFARE ACT

HON. DON YOUNG

OF ALASKA

IN THE HOUSE OF REPRESENTATIVES

Friday, November 7, 2003

Mr. YOUNG of Alaska. Mr. Speaker, I rise today to note that tomorrow, on November 8, 2003, will mark the 25th anniversary of enactment of the Indian Child Welfare Act (ICWA). At a time when American Indian and Alaska Native tribes and families throughout the country were being ravaged by abusive child welfare practices that caused untold thousands of American Indian and Alaska Native children to be unnecessarily placed in foster homes, adoptive homes and Bureau of Indian Affairs (BIA) boarding schools, the 95th Congress said no more and unanimously adopted the ICWA. I am proud to have been a member when that occurred—truly one of the finest moments in the history of Congress and in my service.

The ICWA stands as perhaps the most important Indian law the Congress has enacted. For the first and only time, Congress explicitly acknowledged that the trust responsibility of the United States extends to "protecting American Indian and Alaska Native children" and the integrity of Native American families and tribes, a sine qua non to this Nation's commitment to securing the "continued existence and integrity" of Indian tribes as both governments and societies.

The ICWA recognized that tribes have a *parens patriae* relationship to their children that supersedes any like interest of the States. Accordingly, the law enhances the sovereign right of tribes to determine, under tribal law, whether and under what circumstances children require out-of-home placement. Concomitantly, the law reduces and conditions the authority of States in this regard by compelling an overarching commitment to preventing out-of-home and out-of-tribe placement of American Indian and Alaska Native children. When, as a last resort, placement occurs, the ICWA requires States to make every effort to return American Indian and Alaska Native children to their families and tribal communities. And, when that is not possible, the ICWA mandates that, except in unusual circumstances, these children are preferentially placed in tribal homes.

In the 25 years since enactment, the fulfillment of ICWA's purpose "to protect the best interest of American Indian and Alaska Native children" has been remarkable. Tribes have acted forcefully to help keep families intact. Because of the ICWA, many tribes and States have developed significant cooperative relationships aimed at eliminating State child welfare practices harmful to American Indian and Alaska Native families and children and implementing policies and practices targeted at maintaining the integrity of American Indian and Alaska Native families and tribes. As a result, ICWA's promise to benefit the welfare of American Indian and Alaska Native children has benefitted many thousands of these children, enabling them to mature into functioning and contributing citizens of their tribes and of the Nation.

Although the achievements of the ICWA are many and noteworthy, much remains to be done. Full and effective implementation of the ICWA has not occurred either because of deliberate resistance, outright obstruction, ignorance or of inattentiveness to ICWA's requirements, or just misunderstanding the relationship between the ICWA and the requirements of other federal child welfare laws. To address and remedy ICWA implementation problems of most concern to tribes, I introduced H.R. 2750 on July 15, 2003. This measure—

Clarifies that the ICWA applies to all American Indian and Alaska Native children involved in "child custody proceedings" (as defined in the ICWA) and defines the minimum efforts that must be undertaken to prevent the breakup of an American Indian or Alaska Native child's family through involuntary out-of-home placement.

Requires detailed notice to American Indian and Alaska Native tribes in all voluntary child custody proceedings, to parents in voluntary adoption proceedings, and to parents and tribes in all involuntary proceedings.

Clarifies the right of American Indian and Alaska Native tribes to intervene in all voluntary state court custody proceedings, provided that the tribe files a notice of intent to intervene or a written objection within 45 days of receiving notice of a voluntary termination of parental rights or within 100 days of receiving notice of a particular adoptive placement, and certifies that a child is a member, eligible for membership, or is the child of a member.

Requires notice to extended family members and recognizes their right to intervene in state child custody proceedings.